

REMARKS

This amendment responds to the office action dated October 20, 2005.

The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being obvious in view of the combination of Gusmano, U.S. Patent No. 5,796,877 in view of Takahagi, U.S. Patent No. 6,521,994. Gusmano discloses a multimedia copier that first performs a pre-scan of a document to determine which portions of the document include an image, and based on that determination, resizes the image to fit the output document. Specifically, during the pre-scan, Gusmano discloses a first step of determining a background reflectance of the document, a second step of comparing every scanned pixel to both that reflectance and the reflectance of pixels within a ten-pixel radius in order to infer whether or not the pixel is an image pixel, a third step of determining the coordinates of the four outermost corners of the image, a fourth step of drawing an imaginary rectangle round the image using the discovered corners, a fifth step of rotating the image if the discovered rectangle has a long axis that differs from the orientation of the output media, and a sixth step of expanding the rectangle so as to provide a 10 mm boundary around the scaled image on the output media. Only after all these steps are completed may the full resolution scan commence to provide actual image data for the printed output.

Takahagi discloses a multimedia copier intended to detect whether a copied document is either monochrome or rendered in color. Takahagi notes that this determination had previously been made in a pre-scan, the advantage of the pre-scan being that it saved time; absent the pre-scan, all scan data would have to be recorded into memory before the monochrome/color detection could be made. Because output could not be commenced until after that determination

had been made, net time was saved by the pre-scan. In other words, though the pre-scan took some time at the front of the process, the pre-scan is performed quite rapidly and it allows the printer to begin printing output before all full resolution scan data is written into memory, thus saving more time during the printing process than the pre-scan takes to detect whether or not the document was monochrome.

Takahagi disclosed an improved system that utilized two memory banks where a secondary memory bank would begin receiving data from a second scan of a second page while scan data from a first Page was being processed and printed. Takahagi noted that in this system, if only one page was printed, then it was still faster to use the pre-scan for the color/monochrome distinction. Takahagi noted, however, that if multiple pages were being scanned, such as through an automatic document feeder, it was faster to skip the pre-scan because the total time to both detect the color/monochrome characteristic of an input document and output the document was less than the time for a full resolution scan and a carriage return. The Applicant notes that Takahagi's method of detecting of the color/monochrome distinction is far less complex than Gusmano's resizing procedure, as the former simply requires a conversion to Y a b color space to detect *any* information in the color channels.

At the outset, the Examiner's rejection under 35 U.S.C. § 103(a) was improper. To support a prima facie obviousness rejection, the Examiner not only must provide a prior art motive, i.e. an objective, for the suggested combination, but must also demonstrate some reasonable expectation of success in achieving the intended objective. See MPEP § 2143.02. The time savings of the dual-memory, prescanless system of Takahagi relative to a prescan is

narrowly discloses to be dependent upon the time taken to calculate a color/monochrome distinction. Thus, there is no indication in the prior art that similar results would be achieved if, instead of simply using a Y a b conversion to detect whether any color information is present in a document, all the memory intensive calculations of Gusmano needed to be performed to both detect an image on a document, determine its size, rotate it, and resize it. In other words, the prior art does not disclose that the combined time of performing all of Gusmano's calculations plus the printing time, is less than the time for a scan cycle. If not, then the first page of a multi-document project (the only circumstance in which Takahagi discloses a pre-scan may waste time) may not be finished printing by the time the second page is scanned and Takahagi's dual memory system will suffer delays. Therefore, absent a showing by the Examiner that modifying Gusmano's copier to include Takahagi's dual memory system would actually save time, the Examiner's rejection is improper.

Nonetheless, to further distinguish the present claims over the cited prior art and advance the application to allowance, the applicant has amended claim 5 to include the further limitation of "where said step of calculating at least one of a magnification and a reduction of said original is performed over a time interval that begins before data from said first scan is written into a memory, and is performed concurrently with the processing of said data for image reproduction characteristics other than scaling over at least a portion of said time interval." Gusmano fails to disclose this limitation as the resizing calculations are finished before the full resolution scan takes place, hence cannot be done "concurrently with processing of said data for image reproduction characteristics other than scaling." Furthermore, the only concurrent processing

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possibly disclosed by Takahagi is the single step of converting RGB data to Y a b data, which does not occur "before data from said first scan is written into a memory." Therefore claim 5 is further distinguished over the cited combination and should be allowable.

The Examiner rejected the remaining claims in view of respective combinations, all involving the aforementioned combination of Gusmano and Takahagi. Each of independent claims 11 and 19 have been amended in a manner substantially similar to claim 5. Therefore, each of claims 6-10, which depend from claim 5, 11-13, and 19-22 patentably distinguish over the prior art for the same reasons as does independent claim 5.

In view of the foregoing amendments and remarks, the applicant respectfully request

Respectfully submitted,



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